

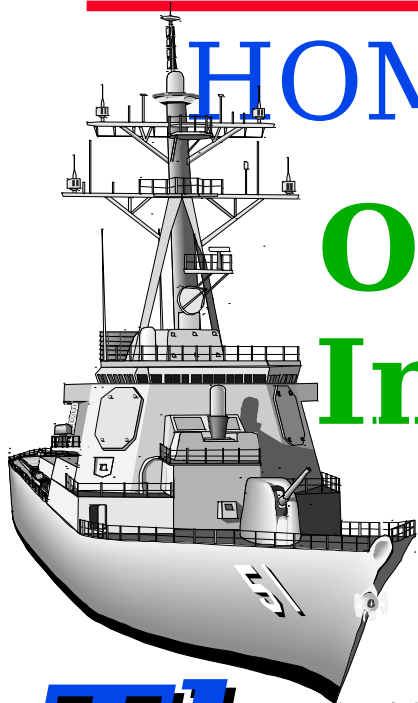


National Defense Industrial

Association

HOMELAND SECURITY

Opportunities For
Innovation & New
Technologies



*The Challenge of
Force Protection*



OUTLINE

- ◆ Lock, Safes, Vaults, Seals & Containers
- ◆ Waterfront Security
- ◆ Explosive Detection Equipment
- ◆ Force Protection & Physical Security Communities of Practice Portal
- ◆ North Island Technology Test Bed



DOD Locks, Safes, Vaults, Seals & Containers Program



- **OBJECTIVE:** Develop, procure, test, engineer, and provide criteria support for locks, safes, vaults, seals, containers, and related systems.
- **Naval Facilities Engineering Service Center (NFESC), Port**

Hueneme, CA provides
technical direction.
AGENCY: Chief of Naval Operations (CNO)
POINT OF CONTACT: Eric Elkins (NFESC)
PHONE NUMBER: (805) 982-1567
EMAIL: elkinsec@nfesc.navy.mil



Opportunities For Innovation & New Technologies



- Locks used to safeguard National Security Information that allow biometric credential and multiple inputs



- Lightweight

Waterfront Security Program



- **OBJECTIVE:** Demonstrate that security in depth, from shore to ship, can be achieved by the effective application of security technology.
- **The Space and Naval Warfare Systems Center, San Diego serves as the Technical Direction Agent**

AGENCY: Chief of Naval Operations (N34)

POINT OF CONTACT: K. G. "Tony"

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Waterside Security System (WSS)



"1. GENERAL DESCRIPTION OF OPERATIONAL REQUIREMENT.

...The Waterside Security System will perform the necessary functions of an intrusion detection system with delay capability. It will detect targets, classify threats, localize threats, assess intrusions, communicate necessary information and delay intruders ..."



WSS

◆ Two distinct sensor subsystems:

– **Surface**

- Radar/Tracking
- CCTV
- Thermal imager



Subsurface

- Swimmer Detection Sonar (SDS)
-



WSS Subsurface Efforts



- **Long-term sonar upgrade effort**
 - Improve existing AN/WQX-2 sonar
- **Near-term initiatives**
 - Adopt AN/WQX-2 software to Commercial Off-the-Shelf (COTS) product
 - Purchase and install "pure" COTS equipment



Long-Term SDS Upgrade Effort

Upgrade the AN/WQX-2 Sonar



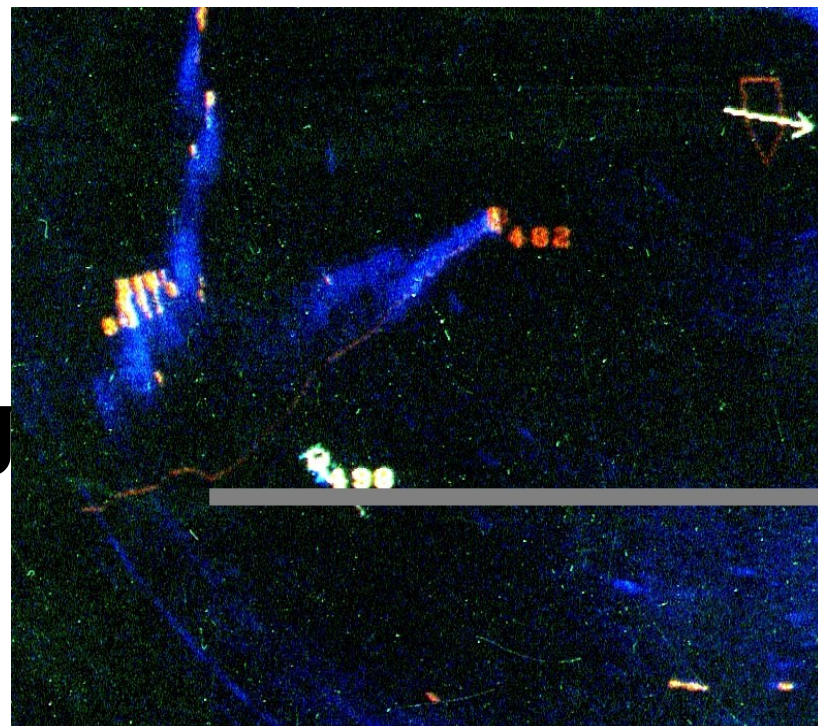
- **Pursue joint cost sharing arrangement to modernize the AN/WQX-2**
-



Near Term SDS Initiative

Modify a COTS product

- Couple the Kongsberg SM 2000 sonar to a processor hosting the ARL UT algorithms





Near Term SDS Initiative



Purchase and install “Pure” COTS equipment

- **Contracted for
15 Thales
sonars**





Boat Barriers

- ◆ Two types available:
 - **DUNLOP** – 8 foot diameter rubber inflatable fenders; \$951 per linear foot.
 - **Port Security Barrier (PSB)** – Pontoon with nylon net catch system; \$800 per linear foot.





DUNLOP Barrier

Installed at

SUBASE New London





PSB Installed at SUBASE Kings Bay





Integrated Radar Optical Surveillance



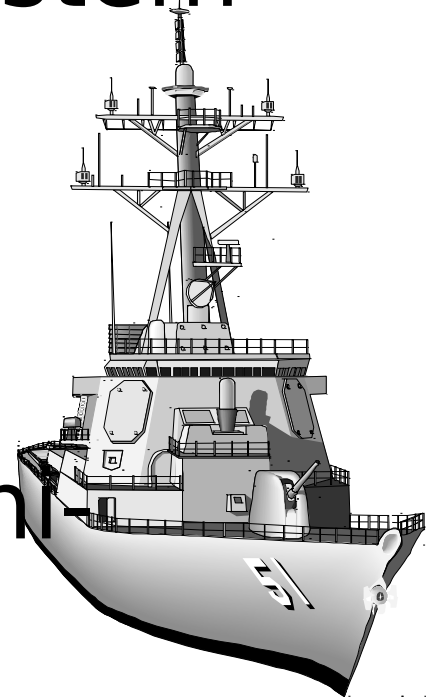
And Sighting System

♦ Fully integrated stabilized system
(IROS3)
that includes:

- Surface search radar
- Electro-optic sensors
- Small arms and spotlight mount

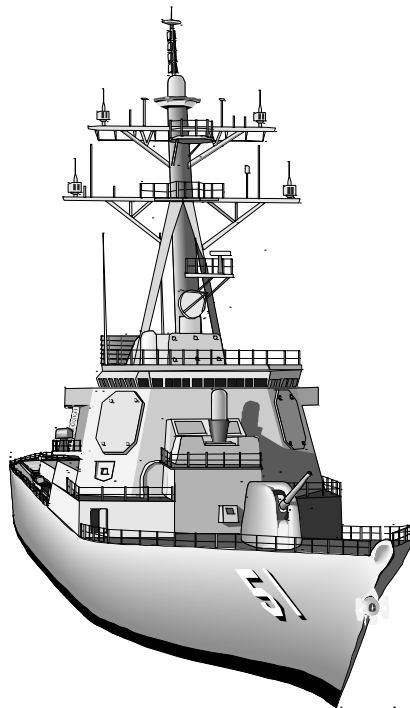
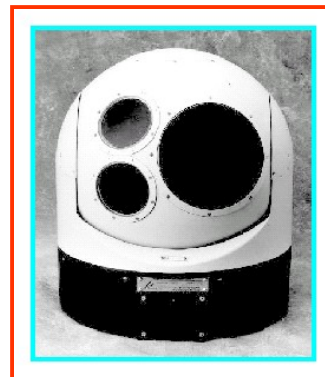
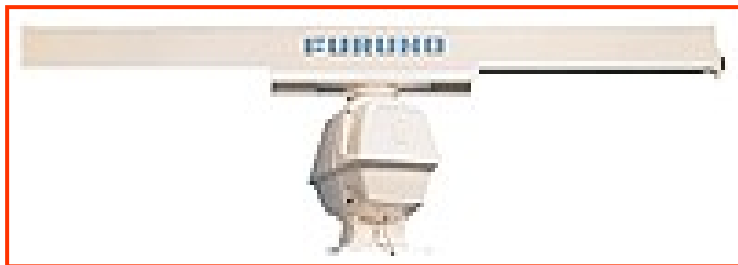
♦ Coupled by wireless communications and data distribution

♦ Provides a common scene allowing ship's company continuous situational awareness





IROS3





Allowance Lists (AL)

- ◆ **2 Allowance Equipage Lists: Physical Security Equipment, and Detector, Explosives, Handheld**
 - ◆ **2 Allowance Parts Lists: NVG, and PVPCS**
 - ◆ **Handheld explosive detection ID/IQ contract awarded in FY 02 by NSWC, Crane IN**
 - **All afloat units (Inventory Objective 804 units)**
 - **397 fielded to date**
 - **Fielding to be complete in o/a 4 months.**
 - ◆ **Baggage scanners and walk-thru metal detectors being considered**
-



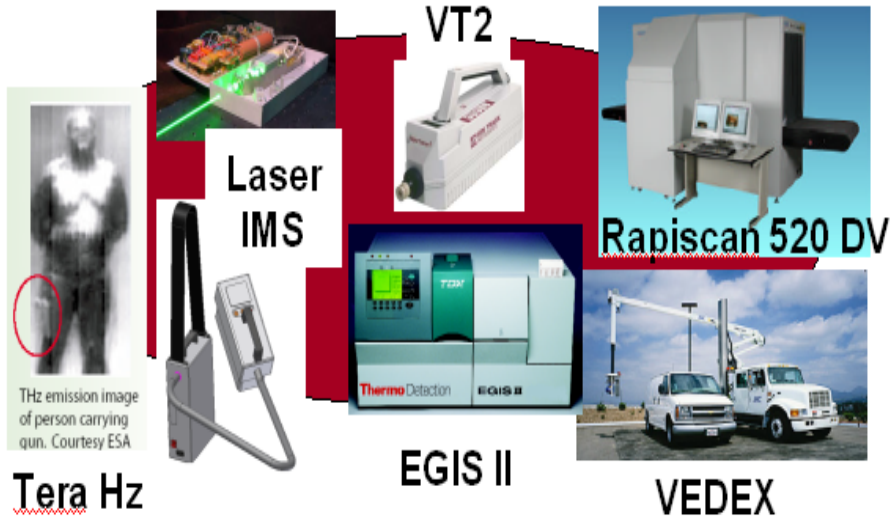
Opportunities For Innovation & New Technologies



- **Swimmer threat countermeasures**
- **Affordable detection of low, slow flyers in port scenarios**



Navy Explosive Detection Equipment (EDE) Program



• **OBJECTIVE:**
Provide a common focus within DoD for research, development, testing, evaluation, acquisition,

• **The Explosive Ordnance Disposal Technology Division supports the**

designated TDA.
Agency Chief of Naval Operations (N34):

POINT OF CONTACT: Leopold L. Targosz, Jr.

PHONE NUMBER:

(202) 422-0122



EDE BASELINE ARCHITECTURE



Entry Point Screening - Personnel

- **CEIA PMD2 Multi-Zone Metal**

Detector- \$5.6K

- Compact, lightweight portable walk-through metal detector. Adjustable sensitivity with no calibration requirements. LEDs in the red column indicate vertical position and relative size of contraband. Has visual and audible alarms.



- **Garrett SuperWand and the CEIA PD140 Scanners -**

- Handheld metal detectors. Weigh 1 lb. Automatic tuning and rechargeable batteries. Audible or vibrating alarms.



Garrett
SuperWand™
\$126



CEIA PD140
\$224



EDE BASELINE ARCHITECTURE



Entry Point Screening - Personnel

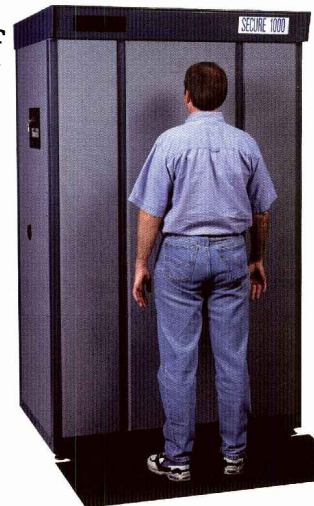
- **Ion Track Instruments Itemiser 2** - \$37.8K

- Ion Mobility Spectrometry (IMS) desktop trace detector with vacuum sample collectors. Detects explosives at picogram



- **Rapiscan Secure 1000** - \$105K

- Backscatter X-ray system; develops detailed image of a human; two X-ray scans required to view entire person; 3 seconds per scan. Newer version called "Crystal Clear" has improved software, imaging, etc. \$125K



* Installation and shipping extra.



FIDE BASELINE ARCHITECTURE



Entry Point Screening - Personnel

- **Rapiscan 520DV** - \$49.3K

GSA

- Has horizontal and vertical X-ray detectors. Tunnel opening is 25 by 17 inches with overall footprint of 101 by 33 inches. It is 53 inches high. Has color monitor. Tested high in recent comparative study.





FDE BASELINE ARCHITECTURE

Entry Point Screening - Vehicles

- **Ion Track Instruments (ITI) Itemiser 2** - \$37.8K

- Ion Mobility Spectrometry (IMS) desktop trace detector with vacuum sample collectors. Detects explosives at picogram levels. Tested high in comparative study of trace detectors.



- **ITI VaporTracer 2** - \$23.7K

- Improved IMS detector, LCD display, batteries, charger, carrying case. Detects both vapors and particles. Can be changed to detect drugs. Tested best of the handheld trace detectors





EDE BASELINE ARCHITECTURE



Entry Point Screening - Vehicles (Low Cost Kit)

- Flexible Fiberscope - fuel tanks, wheel wells, engine areas
 - Semi-Rigid Borescope - vents, ducts, interior panels
 - Videoscope System - under seats, inside engine area, dash, etc.
 - Infrared Scope - cargo
 - Mirrors - under vehicles
 - Chemical Reagent Spray (EXPRAY) - explosive trace detection
 - Image Capture Device - evidence and training
 - Accessories - lighting, cordless screwdriver
 - Quick Reference Cards (QRC) - training on use, repair, and maintenance
 - Total Cost - \$65K (Includes on-site training and shipment)
-



EDE BASELINE ARCHITECTURE



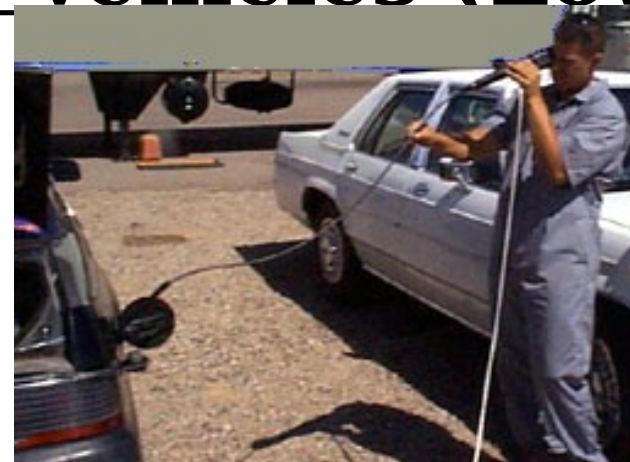
Entry Point Screening - Vehicles (Low Cost Kit)



Mirror



Light Source



Fiberscope



Expray



Video Capture



Videoscope



EDGE BASELINE ARCHITECTURE

Entry Point Screening - Vehicles

- **AS&E MobileSearch** - \$1.8M

- Backscatter & Transmission X-ray. Completely self-contained. Organics (explosives and narcotics) appear white. X-ray truck moves past as many as 4 or 5 vehicles, maritime shipping containers, large pallets of cargo; 450 keV source.





FIDE BASELINE ARCHITECTURE

Mail & Cargo Screening

- **Rapiscan 520DV** - \$49.3K (GSA)

- Has horizontal and vertical X-ray detectors. Tunnel opening is 25 by 17 inches with overall footprint of 101 by 33 inches. It is 53 inches high. Has color monitor. Tested highest in mail screening study.



- **Thermo Detection EGIS II** -

- Chemiluminescence detector with swipe and vacuum sample collectors. Detects explosives and taggents at picogram levels. Tested high in recent





Shaped Energy X-ray with Backscatter Inspection Station



- ◆ Contract let by Army
- ◆ Currently being installed at Naval Station, Pearl Harbor
- ◆ Completion planned for April 2004



- ◆ Has 3.5 MeV “Shaped Energy” linear accelerator x-ray for increased penetration
- ◆ Dual ~~225 Kev~~ backscatter x-ray



Advanced Concept Technology Demonstration (ACTD)



Counter Bomb/Counter r

**Problem: Increasing
threat of suicide
(CB2)
bombers and
command initiated
terrorist devices**





CB2 ACTD Objectives



Actual suicide bomber

- **Force protection**
- **Counter the terrorist/bomber**
- **Improve anti-WMD capabilities**
- **Support US/**



Proposed Solutions



**Millimeter
Wave Technology**

Assessment

Detection

- Relational analysis

- Identify bomber threat
- Characterizes potential threat

Mitigation

- Long range neutralization
- Blast and fragment mitigation



Laser IMS



Detection



- **Standoff**

- ✓ Infrared imaging
- ✓ Active radar
- ✓ MMW imaging
- ✓ Terra Hertz imaging
- ✓ MMW passive non-imaging
- ✓ U/V fluorescence

- **Portals**

- ✓ Metal detector
- ✓ IMS
- ✓ NQR
- ✓ Low dose X-ray
- ✓ Vehicle X-ray
- ✓ IMS
- ✓ Vehicle Neutron



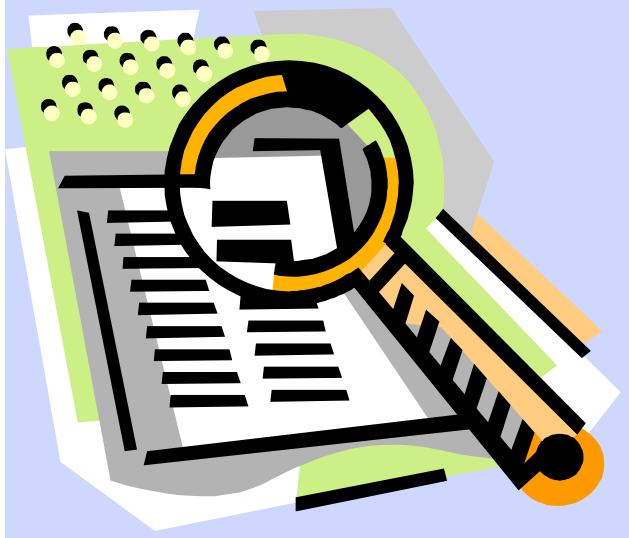
Opportunities For Innovation & New Technologies



- **Standoff detection**
- **Integrated technologies**
- **Easier to use, lower maintenance,**



Force Protection and Physical Security Communities of Practice Program



- **OBJECTIVE:** To improve the sharing of knowledge.
- A web-enabled portal designed to collect, organize, and disseminate information to the Force Protection & Physical Security Communities of Practice (CoP).
- SPAWAR Systems Command, San Diego provides support.

AGENCY: Chief of Naval Operations (N34)

POINT OF CONTACT: Tony Velentzas

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Force Protection & Physical



Security CoP

- ◆ **A capability to provide information tailored to the Force Protection, Physical Security, and Law Enforcement Communities of Practice (CoP)**
- ◆ **A framework for collecting, organizing, and disseminating information to our CoP**
- ◆ **A vehicle for transferring knowledge**





<https://dodpse.spawar.navy.mil>

For portal information, please contact

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North Island Technology Test Bed



- ◆ Proposed by CINCPACFLT in early 2002
- ◆ Leverage currently available commercial and government technology
 - Reduce reliance on manpower
 - Enhance force protection
 - Improve efficiencies
- ◆ Individual building blocks
- ◆ Fully interoperable and “acquireable” subsystems





North Island Technology Test Bed

- ◆ Automated entry control and swimmer detection/waterfront security are initial areas of focus
- ◆ MOA being formally staffed

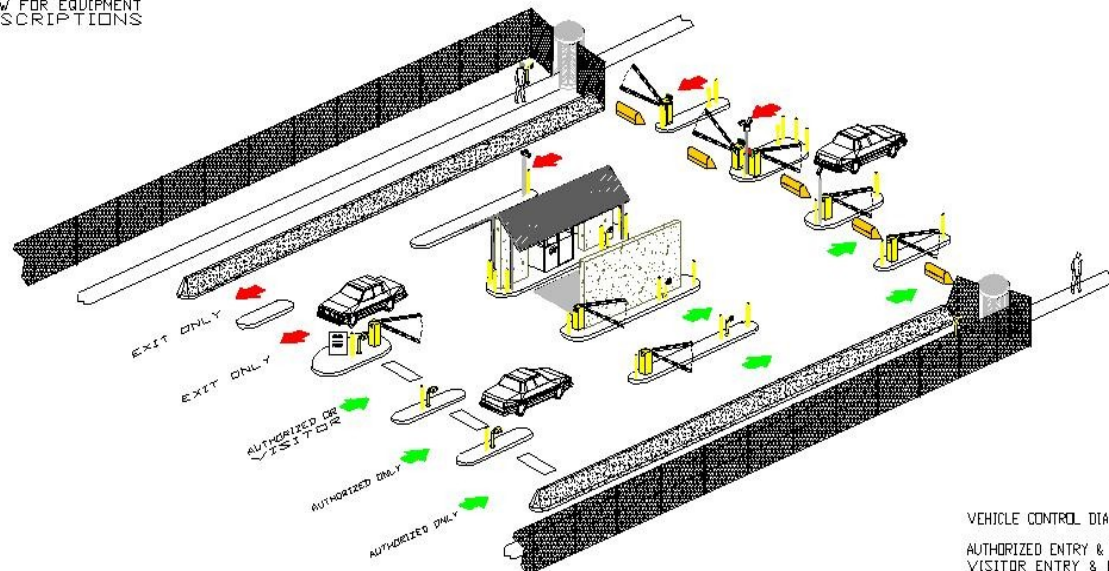




Opportunities For Innovation & New Technologies

- Manpower reductions
- Fully interoperable
- Flexible procurements

REFERENCE PLAN
VIEW FOR EQUIPMENT
DESCRIPTIONS



VEHICLE CONTROL DIAGRAM

AUTHORIZED ENTRY & EXIT
VISITOR ENTRY & EXIT
(5 LANES TYPICAL)

PRELIMINARY DESIGN



Questions?



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